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indicated by Prof. Millardet of Bordeaux, and is fully confirmed by my observations made on specimens from all parts of their geographical area.

The dissepiments or diaphragms, as they are called, which at each node interrupt the medullary tissue, and which are best studied in vines of the previous year, are in *riparia* very thin, only  $\frac{1}{8}$  to  $\frac{1}{4}$  of a line in thickness, while in *cordifolia* they are  $\frac{1}{2}$ –1 line thick, and in *aestivalis* a little thicker yet.

Pursuing these investigations through all the species of *Vitis* attainable, I find that the Rocky Mountain *Vitis* and that from Lake Superior have been correctly referred to *riparia*, while *V. Arizonica*, about the relationship of which I had some doubts, is certainly distinct from *riparia*.

All true *Vitis* have such diaphragms at each node, while all the species of *Ampelopsis* and of *Cissus* are destitute of them. But the startling fact appears that *V. vulpina* of the South in this character is different from all other *Vitis* species and affiliates with *Cissus*, its pith being continuous and not interrupted.

*V. cordifolia*, thus completely separated from *riparia*, approaches, strange as it may seem, close to *aestivalis* in the character of the diaphragm, in its period of flowering, and even in its seeds, and the connection seems to be made by that western entire-leaved and small and black-fruited form of *aestivalis*, which I have distinguished as *cinerea*, to which downy-leaved forms of *cordifolia* approach almost too closely.

All the species of *Vitis* contain in their foliage more or less of a fragrant principle, most probably Cumarin, which the dried leaves retain with such tenacity, that even after fifty years in the herbarium they exhale this very distinct odor. In *cordifolia* I find it much more strongly developed than in any other species.

St. Louis, Mo.

G. ENGELMANN.

§ 310. **Dr. Rugel.**—We have very lately received intelligence of the death of Dr. Rugel in Upper East Tennessee. He was a German sent to this country in about 1842, by Mr. R. J. Shuttleworth, to collect shells and plants for him, which Dr. R. did in Cuba, Florida, Texas, Georgia and Tennessee. Dr. Rugel was a good collector. Several of our North American Helices were discovered by him, as noted by Mr. Shuttleworth with the published descriptions—one species named *Helix Rugeli*. He seems to have been the only one who has detected the singular *Lechea divaricata* of Shuttleworth, one of the rarest of American plants, if indeed it is not a very peculiar form of *L. major*, as is barely possible. The only specimen we believe in this country is in Dr. Gray's Herbarium, unless there be one in Rugel's own collection. It was found near the Manatee River in Florida.

Dr. Rugel left a large collection of both shells and plants. Of the former many are not named, and the locality of some not given. The plants are in better order; they are labelled and catalogued. There are 3,000 or more European plants, and a large collection of American.

All these shells and plants Mrs. Rugel, Dr. R's widow, wishes very much to dispose of. Application may be made to Mrs. Geo. Andrews, Knoxville, Tennessee.

§ 311. *Ficaria ranunculoides*, DC.—In the Spring of '77 I found a small clump of this plant in a copse near Four Corners, Staten Island, N. Y. Last year I neglected to look for it, but last week, May 9th, I visited the locality and found it spread over quite a large area, evidently thoroughly established.

*Asarum Canadense*, L.—A peculiar abortion of this plant was found last week, with the calyx 4 cleft, instead of 3, and entirely devoid of stamens. The rest of the individuals in the same place had nothing unusual about them

ARTHUR HOLLICK.

Staten Island, May 11.

§ 312. *Pteris aquilina*, var. *caudata*.—We have seen a specimen of this fern, which answers to the description in Eaton, and which was gathered in the neighborhood of Manchester, N. J., by, we believe, Mr. H. N. Mertz, of Erie, Pa.

§ 313. *Branched catkins of Salix*.—On May 10th, near Princes Bay, Staten Island, I noticed a group of sterile trees of *Salix fragilis*, L., a large number of the catkins of which were branched, some into two and some into three divisions. The branching took place about half way up the catkin. Mr. G. M. Wilber tells me that he has observed a similar branching of the catkins on other species of willows. Is this of frequent occurrence, and what is the cause?

N. L. B.

§ 314. *Helianthemum Canadense*, Mchx.—Perhaps it is not generally known that the stem, the leaves and the calyx of the above named plant are densely covered with *stellate* hairs. This is interesting, I think, both as characterizing the species (genus?) and as furnishing fine microscopical objects for the admirer of the beautiful in Nature.

JOSEPH SCHRENK.

College Point, May 19.

§ 315. *Androgynous Alder*.—A young lady, to whom I had brought some "alder tags" the other day, coaxed them into bloom in the house. Being an acute observer, she noticed and pointed out to me the fact that one of the staminate catkins was pistillate for the upper half of its length. Of course, as these catkins are pendant, the staminate flowers were *in effect* above the others. I never happened to see this androgynous condition, but, for all that, it may have been noted before.

W. W. B.

Providence, March 23.

§ 316. *New Jersey Plants*.—Last June I collected in waste ground at Communipaw, N. J., *Papaver dubium*, L., and, in cool, moist woods near Plainfield, *Aralia quinquefolia*, Gray. On looking over the latest edition of "Catalogus Plantarum in Nova Caesarea Repertarum" I do not find these two plants. They appear to be new to the State.

FRANK TWEEDY.

Plainfield, N. J.